CLAIMS:

1. A method of forming an electrode, comprising:

a) providing a plurality of evaporation materials in solid-state forms, wherein the differences of the vapor pressure between each of the evaporation materials are within two orders of magnitudes at a selected evaporation temperature;

b) placing the evaporation materials into a single evaporation source in an evaporation chamber;

c) pumping the evaporation chamber down to a predetermined vacuum condition; and

d) heating the evaporation source to a predetermined temperature and evaporating the materials to form the electrode.

2. The method of claim 1 including:

a) monitoring the total evaporation rate to a predetermined value by adjusting the applied electrical power;

b) opening a shutter to start evaporation;

c) closing the shutter when the thickness of the electrode layer has reached a predetermined value; and

d) turning off the power supply.

3. The method of claim 1 wherein the plurality of evaporation materials includes metals, metal compounds, or the combination thereof.

4. The method of claim 3 wherein the plurality of metals includes Mg in combination with Yb, Sb, Sr, or Zn.

5. The method of claim 3 wherein the plurality of metals includes Al in combination with Sn, Cu, Nd, Sc, or Au.

6. The method of claim 3 wherein the plurality of metals includes Ag in combination with Dy, Ga, Er, Al, In, or Mn.

7. The method of claim 1 wherein the plurality of evaporation materials include the combination of metal and organometallic compound.

8. The method of claim 1 wherein the plurality of evaporation materials include the combination of metal and polymeric material.

9. The method of claim 1 wherein the plurality of evaporation materials include the combination of metal, metal compound, and organometallic compound.

10. The method of claim 1 wherein the plurality of evaporation materials include the combination of metal, metal compound, and polymeric material.

11. The method of claim 1 wherein the evaporation source is made of metal or compound, wherein the metal or the compound has a melting point higher than 1500°C.

12. The method of claim 10 wherein the evaporation source is made of tantalum, iridium, molybdenum, platinum, tungsten, stainless steel, carbon, boron nitride, aluminum oxide, or quartz.

13. The method of claim 1 wherein the evaporation source has one or more compartments containing evaporation materials.

14. The method of claim 1 wherein the evaporation materials are placed separately into each of the compartments in the evaporation source.

15. The method of claim 1 wherein the evaporation materials are mixed together in the evaporation source.